The claims remaining in the application are 23-46.

REMARKS

The Applicants would like to thank the previous Examiner for the courteous and quick final Office Action in the parent application.

Rejection Under 35 U.S.C. §102(b) over Biener

The Examiner in the final rejection in the parent application rejected claims 1-6, 10-17 and 22 under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Pat. No. 4,943,432 to Biener.

The Examiner found that Biener teaches salt mixtures for the treatment of psoriasis. The Examiner deemed Applicant's claims to be anticipated over the 12 wt% aqueous salt solution made from adding the dry salt mixture, as set forth in the Example in column 4, to water.

The Applicant must respectfully traverse.

Biener is directed to salt mixture compositions for the treatment of psoriasis and other skin diseases that are composed primarily of a mixture of magnesium halide, with mixed alkali and alkaline earth metal salts (Abstract). A particular advantageous use consists of applying the salt solution in gel instead of fluid form (column 4, lines 4-5). There is no teaching whatsoever in Biener that his salt mixtures have utility or compositions suitable in brine fluids useful for hydrocarbon recovery.

In contrast, the instant invention is directed to high-density brine fluids useful in recovering hydrocarbons (Field of the Invention). The Examiner's attention is respectfully directed to independent composition claims 23 (and claims dependent thereon) and 32 where all the claims require that the brine is selected from the group consisting of packer fluids, completion fluids and workover fluids, and that there is at least one water soluble source of zinc cations. That the composition claims are directed to high-density brine fluids useful in hydrocarbon recovery is further clarified by the fact that the true crystallization temperature (TCT) and the last crystal to dissolve (LCTD) values are specified for the claimed compositions for the cases where two salts are used and where

three salts are used. Biener does not mention or suggest these parameters. Composition claims 24 and 32 further specify that at least one non-emulsifier and at least one wetting agent are present in the compositions, which further define the compositions as high-density brines for hydrocarbon recovery. Biener does not teach or suggest the use of these additional components. With respect to the method claims, particularly independent method claim 33, the language recites that there is at least one source of water-soluble zinc cations to form a brine with the water and that the carbonate or bicarbonate powder additive is added at a controlled rate that forms no precipitate. This recitation is also present in the composition claims herein. Biener does not disclose or hint at rates of carbonate addition or why they would be important.

Biener does not care if precipitates are formed, as evidenced by the solids concentrations up to 0.1 to 34% by weight (please see claims 2, 3, 4, 9, 12 and elsewhere), and the fact that the solids can be suspended in a preferred, gel form (please column 4, lines 4-26).

A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047, 34 U.S.P.Q.2d 1565 (Fed. Cir.), cert. denied, 116 S.Ct. 516 (1995). It is respectfully submitted that Biener does not disclose each and every limitation of the claims, particularly (1) the introduction of the additive as a powder at a controlled rate to avoid precipitation, (2) the introduction of an additive to increase pH without precipitation, (3) the fact that the brine fluid is a packer fluid, a completion fluid, or a workover fluid, and (4) the specification of a specific range for TCT and LCTD. For these reasons alone, the instant rejection must fall.

It is further noted again that in Biener carbonates are added as buffering agents, since there is *no* indication that the pH of the mixtures therein has changed as a result of their addition. In contrast, in the instant compositions and methods the pH increases, indicating that the carbonates are not acting as buffers, but rather as reactants. Indeed, the Applicant would respectfully submit that the differences between Biener and the claimed invention are so great that citing Biener against the instant claims would be to cite non-analogous art against the claims.

It is respectfully submitted that because each and every limitation of the claims is not taught by the reference, the subject 35 U.S.C. §102(b) rejection is avoided. Consideration of the claims is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Biener

The Examiner in the final rejection in the parent application rejected claims 7-8 and 18-19 under 35 U.S.C. §103(a) as allegedly unpatentable over Biener for reasons of obviousness.

Besides the description of Biener given above, the Examiner admitted that Biener differs from the Applicant's claimed invention in that there is no direct teaching (i.e. by way of example) to aqueous brine fluids that have Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range.

The Examiner contended that it would have been obvious to one having ordinary skill in the art to use the broad disclosure of Biener as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter falls within the disclosed subject matter of Biener.

The Applicant must respectfully traverse.

Biener is directed to a composition for the treatment of psoriasis. Biener does not teach, suggest or hint at forming corrosion resistant high-density brine fluids useful in hydrocarbon recovery. Biener does not teach or suggest that the corrosion resistant high-density brine fluids are packer fluids, completion fluids or workover fluids, nor does Biener teach or suggest what TCT or LCTD ranges corrosion resistant high-density brine fluids should have to be useful in these hydrocarbon recovery fluids. Additionally, as established above, Biener does not teach or suggest the addition of the carbonate additives as powder nor the fact that such addition is accomplished without precipitation, particularly when added at a controlled rate. For all of these reasons, it is respectfully submitted that Biener is so different from the claimed invention that it is improper, non-analogous art.

It is respectfully submitted that a *prima facie* obviousness rejection has not been made for the reasons stated. Consideration is respectfully requested.

Rejection Under 35 U.S.C. §102(b) over Falls, et al.

The Examiner in the final rejection in the parent application rejected claims 1-6 and 11-17 under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Pat. No. 4,762,178 to Falls, et al.

The Examiner round that Falls, et al. teaches oil recovery with water containing carbonate salt and carbon dioxide. The Examiner contended that Applicant's claims are deemed anticipated over the aqueous brine solutions taught in column 3, line 27 to column 4, line 63 of Falls, et al.

The Applicant must respectfully traverse.

A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd., id.*

Falls, et al. concerns waterflood oil recovery processes using corrosive, premixed solutions having dissolved carbon dioxide.

Falls, et al. struggles with "reducing the adverse effects of the resultant carbonic acid" from injecting CO_2 into a subterranean reservoir along with avoiding "precipitation of carbonate salts"; please see claim 1:

> ".. an improvement for reducing the adverse effects of the resultant carbonic acid, comprising:
>
> dissolving in the aqueous liquid with which the CO_2 is mixed, an amount of monovalent cationic salt of carbonic acid sufficient for providing a pH of at least about 4 but *is less than enough to cause precipitation of carbonate salts* ..."

However, Falls, et al. does not mention, teach or suggest that carbonate additive should be added in the form of a powder to avoid precipitation, nor at a controlled rate to avoid precipitation.

The Examiner's attention is again respectfully directed to page 3, lines 3-5: "It has been surprisingly discovered that by introducing the carbonate/bicarbonate additive as a

fine powder, particularly in a controlled manner, that no precipitate is formed." The Applicant would also respectfully direct the Examiner's attention to page 3, lines 3-22 of the application as filed:

> **[0011]** ... It has been surprisingly discovered that by introducing the carbonate/bicarbonate additive as a *fine powder, particularly in a controlled manner,* that no precipitate is formed. It is difficult, if not impossible to define what a "controlled manner" would exactly be since the *rate of addition and mixing would depend on a number of factors*, including, but not necessarily limited to, the density of the brine, the nature of the cation used to make the brine, the size and nature of the additive powders, the temperature of the brine, and the interrelations of these factors.
> **[0012]** *One having ordinary skill in the art would normally expect the addition of the carbonate and/or bicarbonate in solid form to precipitate* the brine forming cation. (For instance, in the non-limiting example of a zinc bromide brine, it would be expected that zinc oxide and/or other materials would precipitate). Without wishing to be bound by any one theory, it may be that the use of a powder prevents localized high concentrations of the carbonate and/or bicarbonate additive, where high localized concentrations would cause precipitation. In these brine systems, *once precipitation occurs, it is very difficult to solubilize the precipitate again.* High localized concentrations are believed to be the cause of precipitation when neutralizing liquid bases are used with these brines. *In any case, it has been found that it is impossible to stir the high-density brines fast enough when a neutralizing base is added in liquid form.* (Emphasis added.)

As established above with respect to Biener, Falls, et al. also does not teach or suggest suitable TCT or LCTD ranges for high-density brine fluids. And although Falls, et al.'s fluids are related to oil recovery, they are related to waterflood oil recovery processes and exclusively those containing dissolved carbon dioxide, not high-density brines, nor high-density brines that are packer fluids, workover fluids or completion fluids.

It is thus respectfully submitted that because the reference does not disclose each and every limitation of the claim, the instant rejection must be withdrawn. Consideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Falls, et al. in view of Mondshine

The Examiner in the final rejection in the parent application rejected claims 7-8, 10, 18-19 and 22 under 35 U.S.C. §103(a) as allegedly unpatentable over Falls, et al. in

view of U.S. Pat. No. 4,175,042 to Mondshine (claims 10 and 22 only) for reasons of obviousness.

The Examiner admitted that Falls, et al. differ from Applicant's claimed invention in the following ways: 1) there is no direct teaching (i.e. by way of an example) to aqueous brine fluids that have Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, 2) there is no direct disclosure to Applicant's claimed additive powder size range.

The Examiner found that Mondshine teaches high density brines that have corrosion reducing agents (called bridging agents), such as sodium carbonate or sodium bicarbonate having a particle size range of about 5 microns to about 800 microns, added thereto. Said brines function as well completion and work over fluids.

The Examiner contended that it would have been obvious to one having ordinary skill in the art to use the broad disclosure of Falls, et al., referring to FIGS. 1-2, as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter falls within the disclosed subject matter of Falls, et al.

The Examiner also alleged that it would have been obvious to one having ordinary skill in the art to use the teaching of Mondshine to the use of sodium carbonate or sodium bicarbonate particles having an effective particle size range of about 5 microns to about 800 microns as motivation to actually use sodium carbonate or sodium bicarbonate particles having said size range in the aqueous brines taught by Falls, et al.

The Applicant must again respectfully traverse.

The Applicant respectfully stipulates that Falls, et al. finds precipitation undesirable (col. 2, lines 14-20; col. 4, lines 38-40). However, the Applicant must again respectfully urge that Falls, et al. does not teach, propose or suggest introducing Applicant's carbonates as powders at a controlled rate into high density brines without causing precipitation. Only the Applicant has discovered the beneficial effects of doing so. Silence in the references is not a proper substitute for a disclosure of facts adequate enough to support a conclusion of obviousness, *In re Burt,* 148 U.S.P.Q. 548, 553 (C.C.P.A. 1966). A *prima facie* case must be put forward by the Examiner; missing facts cannot be assumed, *Ex*

parte Wolters, 214 U.S.P.Q. 735 (Bd. App. 1979). As established above, Falls, et al. also does not teach or suggest anything about high-density brine fluids as defined by the claims, much less high-density brine fluids that are either packer fluids, completion fluids or workover fluids, much less fluids having TCT and LCTD values within the defined ranges. Falls, et al. also does not hint or teach anything about incorporating non-emulsifiers or wetting agents into high-density brines (claims 24 and 32). It is respectfully submitted that Mondshine does not provide these deficiencies.

The Applicant is further puzzled by the citation of Mondshine. The Examiner refers to the Abstract thereof: "A nondamaging work over and completion fluid having water soluble bridging agents includes a saturated brine solution having at least one water soluble salt *which is insoluble in the saturated brine solution* and having particle size range of about 5 microns to about 800 microns ..." (Emphasis added.) While Mondshine is concerned with work over and completion fluids, Mondshine's required bridging agents, while water soluble, are insoluble in the saturate brines of concern to Mondshine! Indeed, they could not effectively serve as bridging agents if they were soluble. Thus, even though the size range of Mondshine's salts overlaps that of Applicant's previous claims 10 and 22, Mondshine provides no motivation, teaching or suggestion for using the same in Falls, et al.'s system since there would be no expectation of any advantage to be obtained, much less that of *dissolving* Applicant's additives without precipitation since Mondshine is only concerned with *not* dissolving his bridging agents. At best, Mondshine can only be cited for the existence of the carbonate salts in the recited size range, not for using them in Falls, et al.'s fluids. In contrast, as recited in the independent claims herein, the applicant's additives are brine-soluble. The brines with which this invention is concerned are not saturated brines. In short, neither Falls, et al. nor Mondshine suggest or propose using Mondshine's bridging agents in the Falls, et al. brines to increase the pH thereof without precipitation.

"... [T]he examiner has presented no line of reasoning ... as to why the artisan viewing only the collective teachings of the references would have found it obvious to selectively pick and choose various elements and/or concepts from the several references relied on to arrive at the claimed invention." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (B.P.A.I. 1985). In the present case, a crucial element, introducing the carbonate additives

at controlled rates as powders for dissolution, was not identified by either reference to provide an element which the Examiner could select. Nor is the addition of carbonate additive powders at controlled rates without precipitation identified by either reference as a possibility or a concept. See also *In re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988) where the Court of Appeals for the Federal Circuit noted that for an invention to have been obvious, *both* the suggestion of the invention and the expectation of its success must be found in the prior art, rather than in the applicant's disclosure. The references here do not present either the suggestion of the invention, or any expectation for its success. Neither reference suggests or hints at TCT or LCTD values in the ranges recited. Furthermore, neither reference alludes to or mentions that wetting agents or non-emulsifiers may be used in the high-density brines of the invention (claims 24 and 32).

Furthermore, it is respectfully submitted that Mondshine is inappropriately cited herein because it relates to fluid loss applications and not corrosion inhibition.

For all of these reasons, it is respectfully submitted that a *prima facie* 35 U.S.C. §103 rejection has not been made against the amended claims. Consideration is respectfully requested.

Rejection Under 35 U.S.C. §102(b) over Kennedy, et al.

The Examiner in the final rejection in the parent application rejected claims 1-6 and 12-17 under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Pat. No. 2,581,540 to Kennedy, et al.

The Examiner found that Kennedy, et al. teaches aqueous brine solutions that reduce corrosion in oil and gas wells. The taught aqueous brine solutions contain a salt, such as magnesium chloride, and a corrosion-reducing component, which is either sodium bicarbonate or mixtures of sodium bicarbonate and sodium carbonate. The pH of the aqueous brines is within the range of 6.0 to 8.0. The Examiner deemed Applicant's claims anticipated over the examples where the solid composition is added to water.

The Applicant must respectfully traverse yet again.

A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.*,

id. As will be shown, Kennedy, et al. does not disclose (or even hint at) each and every limitation of the present claims.

Kennedy, et al. teaches methods of reducing corrosion in oil and gas wells that involves adding to the fluid stream bicarbonates of alkali metals such as sodium and potassium bicarbonates, as noted in column 1, lines 1-5. Kennedy, et al. discloses that such carbonates are added in the form of cylindrical sticks about 0.5 inch less than the opening in the tubings or fittings, which apparently have sizes on the order of inches, where the carbonate is held together with a binder; please see column 2, lines 17-27:

> *Bicarbonates and modified carbonates may be added to the well stream by* pumping or lubricating a solution down the annular space between casing and tubing, or by lubricating down the tubing in liquid *or solid form. In the latter method, it is convenient to use the material made up in the form of cylindrical sticks,* whose diameter is about one-half inch less than the minimum size of opening in the tubing or fittings. These sticks may be made up with several materials as binders ... (Emphasis added.)

The claims herein require that the additive is in the form of a *powder*, and that it is added in an amount effective to increase the pH of the brine fluid and at a controlled rate that forms no precipitate. Kennedy, et al.'s bound-together *sticks* of bicarbonate or modified carbonates can hardly be understood to be powders. There is also no teaching or mention in Kennedy, et al. that precipitation is avoided by their method, as now required in all the instant claims. As has been established previously, the Applicant surprisingly discovered that introduction of a powder avoids precipitation, particularly when added at a controlled rate.

The claims also require that the high-density brine fluids be packer fluids, completion fluids or workover fluids. It is respectfully noted that Kennedy, et al. is completely silent about these types of high-density brine fluids. Thus, Kennedy, et al. cannot disclose (or suggest) these particular, claimed high-density brine fluids.

Kennedy, et al. are also primarily concerned with produced brines, whereas the corrosion resistant brine fluids of the invention are packer fluids, completion fluids, and/or workover fluids.

Further, the claims require that the high-density brine fluids have TCT and LCTD values within certain specified ranges. Kennedy, et al. is also completely silent on these parameters and thus cannot teach or disclose anything about them.

Additionally, Kennedy, et al. does not disclose or suppose packer fluids, completion fluids or workover fluids that include a wetting agent or a non-emulsifier as recited in claims 24 and 32.

The Applicant must again respectfully urge that the reference has not disclosed each and every element of the rejected claims, and therefore this rejection must fall.

Consideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Kennedy, et al. in view of Mondshine

The Examiner in the final rejection in the parent application rejected claims 10 and 22 under 35 U.S.C. §103(a) as allegedly unpatentable over Kennedy, et al. in view of Mondshine for reasons of obviousness.

The Examiner admitted that Kennedy, et al. differ from Applicant's claimed invention in that there is no direct disclosure to Applicant's claimed additive powder size range.

The Examiner contended that it would have been obvious to one having ordinary skill in the art to use the teaching of Mondshine to the use of sodium carbonate or sodium bicarbonate particles having an effective particle size range of about 5 microns to about 800 microns as motivation to actually use sodium carbonate or sodium bicarbonate particles having said size range in the aqueous brines taught by Kennedy, et al.

Once more, the Applicant must respectfully traverse.

As established above, Kennedy, et al. has no hint or suggestion, much less teaching, of introducing carbonate additives into brines in powder form and at a controlled rate that forms no precipitate. The mere fact that Mondshine teaches that such carbonates are known to exist in the size range recited by claims 10 and 22 does not provide or supply this teaching since Mondshine exclusively teaches these materials as *insoluble* bridging agents in *his* brines. Precipitation is certainly not an issue in Mondshine since his bridging agents are insoluble *in the first place.*

Indeed, it should be properly understood that Mondshine teaches away from the claimed invention since the lesson to be learned therefrom is that the bridging agents in their method are insoluble in brines. The Examiner's attention is further respectfully directed to *In re Haruna, et al.*, 249 F.3d 1327, 1335; 58 U.S.P.Q. 2d 1517 (Fed. Cir. 2001):

> "A prima facie case of obviousness can be rebutted if the applicant ... can show 'that the art in any material respect taught away' from the claimed invention." *In re Geisler*, 116 F.3d 1465, 1469, 43 U.S.P.Q.2D (BNA) 1362, 1365 (Fed. Cir. 1997) (quoting *In re Malagari*, 499 F.2d 1297, 1303, 182 U.S.P.Q. (BNA) 549, 533 (CCPA 1974)). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, ... would be led in a direction divergent from the path that was taken by the applicant." *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, 192 F.3d 1353, 1360, 52 U.S.P.Q.2D (BNA) 1294, 1298 (Fed. Cir. 1999).

The Applicant is still confused about why the Examiner cited Mondshine with respect to the Applicant's claims since it only teaches bridging agents insoluble in his brines which is a teaching divergent from the claimed invention. Mondshine is exclusively focused on saturated brines. In contrast, as recited in the independent claims herein, the applicant's additives are brine-soluble. The brines with which this invention is concerned are not saturated brines. As with Falls, et al., there is no motivation provided by either Mondshine or Kennedy, et al. for combining them in the manner supposed by the Examiner. Neither Kennedy, et al. nor Mondshine cite disadvantages for using the sticks of bicarbonate or modified carbonates of Kennedy, et al. nor do the two references cite any motivation for substituting Kennedy, et al.'s sticks with the insoluble salt particles of Mondshine. Since these motivations are missing, the rejection must fall; please see *Ex parte Clapp* and *In re Dow Chemical Co., id.*

Furthermore, Mondshine does not supply the deficiency in Kennedy, et al. of the lack of any teaching of acceptable ranges for TCT and LCTD.

Additionally, it is respectfully submitted that Mondshine is inappropriately cited herein because it relates to fluid loss applications and not corrosion inhibition.

It is respectfully submitted that a *prima facie* 35 U.S.C. §103 rejection has not been established over these references with respect to the claims at issue. Consideration is respectfully requested.

Rejection Under 35 U.S.C. §102(b) over EP 0 845 520 A1

The Examiner in the final rejection in the parent application rejected claims 1, 3-5, 10, 12, 14-16, and 22 under 35 U.S.C. §102(b) as allegedly anticipated by EP 0 845 520 A1.

The Examiner found that EP 0 845 520 A1 teaches stabilized aqueous brines containing soluble zinc salts and an alkaline buffer, such as calcium carbonate, referring to the Abstract. Thus, the Examiner alleged that Applicant's claims are deemed to be anticipated over the examples.

Yet again, the Applicant must respectfully traverse. A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd., id.*

It is respectfully submitted that EP 0 845 520 A1 does not and can not teach each and every limitation of the amended claims herein since it does not teach, suggest or hint at adding carbonate additives in powder form at controlled rates in amounts to dissolve and raise the pH without precipitation, as recited. In fact, EP 0 845 520 A1, like Mondshine, teach the *opposite*, that the carbonate bridging agents are supposed to be *insoluble* in the brines described in that publication. The Applicant thus respectfully submits that EP 0 845 520 A1 (and Mondshine) irrelevant to the claimed invention and in particular teaches away from it. EP 0 845 520 A1 is exclusively concerned with saturated brines. In contrast, as recited in the independent claims herein, the applicant's additives are brine-soluble. The brines with which this invention is concerned are not saturated brines.

Contrary to the Examiner's assertion, the Abstract in EP 0 845 520 A1 does not refer to calcium carbonate as an alkaline buffer. Instead, the Abstract recites, " Additionally, the *combination of zinc carbonate and zinc oxide as the alkaline buffer* provides fluids having increased thermal stability ..." (emphasis added). Calcium carbonate and magnesium carbonate are mentioned, but as acid soluble bridging agents; please see page 5, lines 13-18. The Examiner's attention is particularly directed to lines 17-18: "When the bridging agent is water soluble, it is preferred that *the brine be saturated with respect to*

the bridging agent, or at least substantially saturated such *that less than 10% by weight of the bridging agent is dissolved in the brine.*" (Emphasis added.) The EP 0 845 520 A1 inventors clearly do not want too much of the bridging agent to be dissolved in the brine, that is, they want most of it to be insoluble or essentially a solid that while not technically a precipitate is nevertheless present as an undissolved solid. It is thus respectfully submitted that EP 0 845 520 A1 teaches no closer to the claimed invention than Mondshine, which the Examiner realizes cannot support a 35 U.S.C. §102(b) rejection.

Furthermore, EP 0 845 520 A1 does not disclose (or even hint) at what would be acceptable ranges for the TCT and LCTD values recited in the claims.

Additionally, the EP 0 845 520 A1 reference does not disclose (or suggest) the inclusion of at least one non-emulsifier and at least one wetting agent in high-density brine fluids as recited in claims 24 and 32 herein.

Thus, the rejected claims are not anticipated thereby and the instant rejection should be withdrawn. Consideration is respectfully requested.

Rejection Under 35 U.S.C. §103(a) over Giddy in view of Mondshine

The Examiner in the final rejection in the parent application rejected claims 1-8, 10-19 and 22 under 35 U.S.C. §103(a) as allegedly obvious over GB 799,192 to Giddy in view of Mondshine.

The Examiner found that Giddy discloses corrosion resistant aqueous brines that comprise water soluble salts, such as those salts that have a cation selected from zinc, magnesium, etc. and an anion selected from chlorides, bromides, etc. The said corrosion resistant brines were seen by the Examiner to comprise a corrosion inhibiting additive, such as sodium carbonate. The Examiner admitted that Giddy differs from Applicant's claimed invention in the following ways: 1) there is no direct teaching (i.e. by way of an example) to an aqueous brine that actually uses sodium carbonate as the corrosion inhibiting agent, 2) there is no direct teaching (i.e. by way of an example) to aqueous brine fluids that have Applicant's specifically recited claimed additive to water-soluble cation mole ratio and weight percentage range, 3) there is no direct disclosure to Applicant's claimed additive powder size range.

The Examiner noted that Mondshine was described previously.

The Examiner contended that it would have been obvious to one having ordinary skill in the art to use the disclosure of Giddy as motivation to make aqueous brine solutions that actually use sodium carbonate as the corrosion-inhibiting component, since sodium carbonate is directly suggested by the patent for this purpose.

The Examiner also alleged that it would have been obvious to one having ordinary skill in the art to use the disclosure of Giddy as motivation to make aqueous brine solutions that meet Applicant's specifically claimed additive to water-soluble cation mole ratio and weight percentage range, since Applicant's claimed subject matter falls within the subject matter of Giddy.

The Examiner further supposes that it would have been obvious to one having ordinary skill in the art to use the teaching of Mondshine to the use of sodium carbonate or sodium bicarbonate particles having an effective particle size range of about 5 microns to about 800 microns as motivation to actually use sodium carbonate or sodium bicarbonate particles having said size range in the aqueous brines taught by Giddy.

Once again, the Applicant must respectfully traverse.

The Examiner admits to a number of important deficiencies in Giddy, but in particular, Giddy does not teach, hint or suggest that carbonate additives may be added to brines *in powder form at a controlled rate* to raise their pH that *forms no precipitation.* In fact, precious little is present in Giddy about carbonates, except that sodium carbonate is merely mentioned near the end of a list of corrosion inhibiting substances in the portion of Giddy at page 2, lines 20-50 cited by the Examiner.

Giddy teaches nothing about high-density brine fluids that are completion fluids, packer fluids, or workover fluids. Giddy also teaches nothing about the suitable TCT and LCTD ranges for such fluids.

It is further respectfully submitted that Mondshine is of no help in supplying the deficiencies of Giddy. In fact, as repeatedly established, Mondshine explicitly teaches that his carbonate bridging agents are *insoluble* in his brines in the particle sizes taught. Mondshine is exclusively focused on saturated brines. In contrast, as recited in the independent claims herein, the applicant's additives are brine-soluble. The brines with which this invention is concerned are not saturated brines. It is respectfully submitted that

one having ordinary skill in the art would not look to Mondshine for any help or instruction on how to dissolve carbonate additives into brine to raise their pH without precipitation. It is further respectfully submitted that the Examiner has identified *no motivation* for combining these two references. Indeed, the problem of precipitation is not even identified in either reference, so one having ordinary skill in the art would have no reason to use the bridging agents of Mondshine in the range of 5-800 microns in Giddy since no reason is provided or supposed to improve on Giddy – unless the Examiner is using the Applicant's claims improperly as a blueprint to pick and choose from various references only those parts of the references that might have utility in making an obviousness rejection. It is respectfully submitted that the Examiner has not established that one having ordinary skill in the art would use Mondshine's insoluble bridging agents in Giddy's metal working and cutting fluids for any reason, much less to increase the pH of without precipitation.

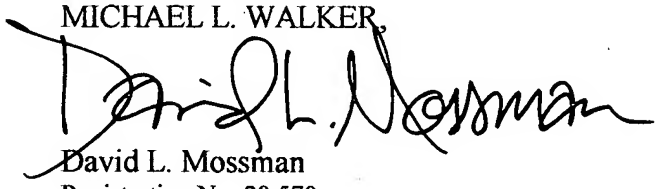
It is respectfully submitted that the Examiner has failed to establish a *prima facie* 35 U.S.C. §103 rejection of the claims based on these two references. Even if such a *prima facie* rejection was established, and the Applicant is not conceding that it has been, it is respectfully submitted that the rejection would be successfully rebutted by the unexpected discovery that powdered carbonate additives can be added to brines at a controlled rate to increase the pH without precipitation. "One way for a patent applicant to rebut a *prima facie* case of obviousness is to make a showing of 'unexpected results,' *i.e.*, to show that the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would have found surprising or unexpected." *In re Soni*, 54 F.3d 746, 750, 34 U.S.P.Q.2d 1684, 1687 (Fed. Cir. 1995) cited in *In re Glaug*, 283 F.3d 1335, 1341; 62 U.S.P.Q.2d 1151 (Fed Cir. 2002). As established previously, one having *ordinary* skill in the art would not expect the addition of a solid additive to avoid precipitation, particularly when one of the cited references explicitly teaches that the carbonates are supposed to be insoluble. Rather, the natural expectation is that adding a solid additive would encourage solid precipitation.

Furthermore, it is respectfully submitted that Mondshine is inappropriately cited herein because it relates to fluid loss applications and not corrosion inhibition.

Consideration is respectfully requested.

It is respectfully submitted that the arguments presented above place the new claims in condition for allowance. Consideration and allowance of the claims, as newly submitted, are respectfully requested. The Examiner is respectfully reminded of his duty to indicate allowable subject matter. The Examiner is invited to call the Applicants' attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,
MICHAEL L. WALKER,



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